Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Reallocation of the 216-220 MHz,	)	WT Docket No. 02-8
1390-1395 MHz, 1427-1429 MHz,	)	RM-9267
1429-1432 MHz, 1432-1435 MHz,	)	RM-9692
1670-1675 MHz, and 2385-2390 MHz	)	RM-9797
Government Transfer Bands	)	RM-9854
	)	RM-9882

REPLY COMMENTS OF ITRON, INC.

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SUMMARY

As discussed in these reply comments, the other parties substantially agree with Itron that the Commission should limit the 1427-1432 MHz band to utility and medical telemetry and require first-come, first-served, site-by-site licensing of the non-medical portion of this spectrum, based on a 70 mile separation standard. No party has objected to an exclusive allocation in the upper half of the band for utility telemetry, which will protect medical telemetry against harmful interference. On other issues:

- Assuming that the Commission adopts an exclusive allocation for utility telemetry, it will need to develop eligibility criteria for utility telemetry. Only two parties commented on this issue. Itron believes that eligibility for utility telemetry licenses should be limited to electric, gas, and water companies that provide water and power to the public; companies that provide telemetry services to such companies; and companies that generate and transport energy resources.
- There is support for grandfathering of incumbents that are licensed on a secondary basis in the 1427-1432 MHz band. Assuming incumbents are grandfathered, Itron believes they should be given priority over new entrants in securing primary status. When the incumbents were licensed, they relied on the rules in effect at the time, under which federal government users were the only primary licensees. It would be inequitable to subject these incumbents, who designed their systems to be compatible with government operations in reliance on the allocations that were in effect, to a risk of displacement by new, non-governmental primary licensees.
- While the band flip aspect of the *Joint Proposal* received considerable support from the commenting parties, Itron and AHA are concerned that the band flip proposed in the *NPRM* differs from the one they developed. The Commission should adopt the specific band flip plan offered in the *Joint Proposal* to protect medical telemetry against interference from higher power land mobile operations above 1432 MHz.
- There is general agreement that the 1427-1432 MHz band should be subject to frequency coordination, and Itron supports UTC's offer to serve as a frequency coordinator.
- UTC proposes to limit non-medical telemetry users to 500 kHz per service area. Many utilities, however, will require 1 MHz of spectrum to support new, wideband telemetry applications, and Itron believes a 1 MHz limit would strike a better balance between the number of potential licensees and the spectrum that is available to each licensee.
- Some parties have proposed that the Commission require that channels be a particular size. Itron continues to believe that the division of bandwidth should be left to the licensee, and in the event that the Commission adopts a channel

standard, it should permit licensees to subdivide and aggregate their channels so they can tailor their system specifications to their service needs.

- The WMTS manufacturers express concern with the possibility of interference and suggest that secondary operations be prohibited or subject to power limits. Itron shares the manufacturers' interference concerns, and for that reason, Itron and AHA have developed stringent emissions limitations that are embodied in the *Joint Proposal*.
- Itron shares the concerns of Philips and AHA that mobile telemetry poses the potential for interference to WMTS. The Commission can address these concerns by: (1) limiting non-medical telemetry operations to utility telemetry, as urged by AHA, the WMTS manufacturers, and the utility parties; (2) limiting mobile operations to fixed utility licensees; and (3) adopting the mobile station power limits proposed by Itron and AHA, which are more stringent than those applicable to fixed telemetry stations.
- Itron knows of no reason that cellular architecture needs to be prohibited in the 1427-1432 MHz band to protect government operations or radio astronomy monitoring stations. To the contrary, Itron already employs cellular architecture in some of its systems and has been able to operate compatibly with these users.

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REPLY COMMENTS OF ITRON, INC.

Itron, Inc. ("Itron"), by its attorneys, hereby submits reply comments in the above-referenced proceeding.[1] In the *NPRM*, the Commission proposed service rules for the 27 megahertz of spectrum recently transferred from Government to non-Government use. Included in this allocation is 5 MHz of spectrum, the 1427-1432 MHz band, which the Commission has proposed to make available to wireless medical telemetry services and other forms of telemetry, including utility telemetry.

In its initial comments, Itron urged the Commission to limit the 1427-1432 MHz band to utility and medical telemetry and to require first-come, first-served, site-by-site licensing of this spectrum.[2] Itron's positions are in accord with those expressed in the initial comments of the other parties addressing 1427-1432 MHz band issues, including the American Hospital Association Task Force on Medical Telemetry ("AHA"), and the United Telecom Council ("UTC"), who agree with Itron that giving utility telemetry

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[1] *See* Reallocation of the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Band Transfer Bands, *Notice of Proposed Rulemaking*, WT Docket No. 02-08 (rel. Feb. 6, 2002) [hereinafter the "*NPRM*"].

[2] *See* Comments of Itron, Inc., WT Docket No. 02-8 (filed March 4, 2002) [hereinafter "Itron Comments"]

exclusive use of the upper half of the band offers the best protection for the vital medical telemetry services to be offered in the lower half of the band.[3]

Several other parties, including Spacelabs Medical, Inc. ("Spacelabs"), Philips Medical Systems ("Philips"), and General Electric Medical Systems Information Technologies ("GE"), also supported essential elements of the AHA-Itron *Joint Proposal*.[4] Notably, no party objected to an exclusive allocation for utility telemetry. In these reply comments, Itron addresses those limited areas in which its positions differ from those of certain parties.

DISCUSSION

I. Limiting Telemetry In The 1427-1432 MHz Band To Utility Telemetry

A. Eligibility for Non-WMTS Licenses

In its initial comments, Itron urged the Commission to limit non-medical telemetry in the 1.4 GHz band to utility telemetry.[5] Itron showed that such an allocation would offer better protection to wireless medical telemetry services ("WMTS") than other forms of telemetry.[6] All of the parties addressing this issue agreed with Itron's position.

AHA, for example, explained that WMTS will receive the most protection from "relatively low power, fixed telemetry services operated by an easily identifiable and

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[3] *See* Comments of American Hospital Association Task Force on Medical Telemetry, WT Docket No. 02-8 (filed March 4, 2002) [hereinafter "AHA Comments"]; Comments of United Telecom Council, WT Docket No. 02-8 (filed March 4, 2002) [hereinafter "UTC Comments"].

[4] *See* Comments of Spacelabs Medical, Inc., WT Docket No. 02-8 (filed March 4, 2002) [hereinafter "Spacelabs Comments"]; Comments of Philips Medical Systems, WT Docket No. 02-8 (filed March 4, 2002) [hereinafter "Philips Comments"]; Comments of General Electric Medical Systems Information Technologies, WT Docket No. 02-8 (filed March 4, 2002) [hereinafter "GE Comments"].

[5] *See* Itron Comments at 2 *et seq.*

[6] Id.

limited number of utilities in each geographic area."[7] By contrast, AHA stated, "[o]pening up the adjacent band to general telemetry use … would create significant equipment design concerns to WMTS manufacturers, since the sources of interference will be less easily identifiable, and thus the costs of avoiding susceptibility to interference could be increased."[8] Similarly, Philips stated that the Commission could protect medical telemetry by limiting the "number of compatible telemetry users, such as the utility telemetry community."[9]

Itron also demonstrated that a grant of spectrum for the sole use of utility telemetry would be consistent with the National Telecommunications and Information Administration's call for granting exclusive spectrum to utilities and their supporting infrastructure.[10] UTC supported this position, explaining that utilities "need, as part of their regular mission, reliable and available communications."[11]

B. Definition of "Utility"

Assuming that the Commission makes the non-WMTS frequencies in the 1427-1432 MHz band available exclusively for utility telemetry, two parties have commented on the definition of "utility" that should be used for this purpose.[12] API requested that the Commission adopt eligibility rules that are broad enough to include natural gas and petroleum SCADA applications. UTC stated that utilities provide public safety radio services because they: (1) have an infrastructure they use primarily to provide essential

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[7] AHA Comments at 4. AHA also supports the use of mobile devices within a fixed utility telemetry network. *See* AHA *Ex Parte* Comments (filed Dec. 19, 2001), attached to Itron Comments as Exhibit C {hereinafter "*AHA December Ex Parte*"].

[8] AHA Comments at 5; *see also* UTC Comments at 5 ("UTC supports the comments of AHA that propose limiting telemetry in the 1.4 GHz band to utility telemetry").

[9] Spacelabs Comments at 1.C; *see also* Philips Comments at 3-4 (noting that one method to protect medical telemetry is to limit the "number of compatible telemetry users, such as the utility telemetry community").

[10] *See* Marshall W. Ross & Jeng F. Mao, "Current and Future Spectrum Use by the Energy, Water, and Railroad Industries: Response to Title II of the Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 2001 Public Law 106-553," U.S. Department of Commerce, National Telecommunications and Information Administration (Jan. 30, 2002).

[11] UTC Comments at 6.

[12] American Petroleum Institute Comments at 4-5; UTC Comments at 5-6.

public services to the public at large; and (2) need, as part of their regular mission, reliable and available communications to prevent or respond to a disaster or crisis affecting the public at large.

Itron believes that eligibility for utility telemetry licenses should be limited to electric, gas, and water companies that provide water and power to the public; companies that provide telemetry services to such companies; and companies that generate and transport energy resources.

Extending eligibility to companies that provide telemetry services to utilities is critical. In an era of utility deregulation and multiple service providers, it has become increasingly common for utilities to outsource some functions to enhance efficiency and minimize costs. The Commission should adopt eligibility criteria that enable utilities to take full advantage of this flexibility.

II. Licensing

Itron's views as to the most efficient way in which to license non-WMTS users in the 1427-1432 MHz band have been echoed by the other parties.

A. Site-by-Site Licensing

Other parties agree that site-by-site licensing for non-WMTS telemetry has much to commend it. As UTC has stated, "[t]his process has worked extremely well for telemetry applications … [which] can be coordinated easily to avoid interference."[13] Spacelabs agrees, arguing that "[l]icensing of primary non-medical telemetry users [should] be on a site-by-site basis."[14] Moreover, geographic licensing would be impractical in the so-called flip areas described in the *Joint Proposal*. In these areas, Itron and the AHA have set forth a detailed plan to eliminate the possibility of interference to

[13] UTC Comments at 7.
[14] Spacelabs Comments at 2.B.

WMTS while preserving the investment in utility telemetry already made in these markets.[15]

B. Authorized Service Areas

Other parties, like Itron, have supported the Commission's preliminary determination that a 70 mile (113 km) separation standard is appropriate for the licensing of a given service area.[16] In addition, Itron concurs with UTC's suggestion that the Commission require short-spaced applicants to comply with the general waiver guidelines found in Section 1.925 of the Commission's Rules.[17]

Furthermore, it would be appropriate to adopt more detailed waiver standard comparable to that required under Section 90.621(b)(4).[18] Under this standard, an applicant would be required to offer statistical analysis to show that an incumbent licensee would receive no more interference than could occur from a fully-spaced station. In addition, the incumbent should be given notice of the waiver application and sufficient time in which to respond.

C. Assignment of Frequencies

Itron and the UTC agree that the Commission should grant applications in the 1427-1432 MHz band on a first-come, first-first served basis.[19] No party opposed this licensing method.

The first-come, first-served regime has worked well in other site-by-site licensing contexts. Moreover, it is far more efficient than either the window or cut-off approach, which require months of deadlines, bidding rounds and associated challenges. Finally, and as noted by UTC, "first-come-first-served processing would be consistent with the

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[15] *See* Joint Statement of Position by the American Hospital Association Task Force on Medical Telemetry and Itron, Inc. [hereinafter the "*Joint Proposal*"], attached to Comments of Itron, Inc., ET Docket No. 00-221 (filed Mar. 8, 2001).
[16] Itron Comments at 5-6.
[17] *See* UTC Comments at 7; 47 U.S.C. §1.925.
[18] 47 U.S.C. §90.621(b)(4).
[19] *See* Itron Comments at 6; UTC Comments at 10.

FCC's obligation to consider licensing schemes that avoid the receipt of mutually exclusive applications."[20] With a first-come, first-served assignment process, mutually exclusive applications should be rare, and could be remedied by the Commission's existing competitive bidding procedures.

D. Treatment of Incumbents

1. Grandfathering

Itron supports the grandfathering of incumbents in the 1427-1432 MHz band as secondary users. If secondary users wish to upgrade to primary status - and are eligible to do so under the service rules adopted in this proceeding[21] - they should be required to follow the same application procedures as new applicants, but they should be given priority over new entrants in being granted primary status. [22]

When the incumbents were licensed, they relied on the rules in effect at the time, under which federal government users were the only primary licensees. It would be inequitable to subject these incumbents, who designed their systems to be compatible with government operations in reliance on the allocations that were in effect, to a risk of displacement by new, non-governmental primary licensees.

If the Commission adopts the 1 MHz per licensee spectrum limit that Itron has proposed, giving incumbents first priority will leave ample room for new entrants. In sum, giving first preference to incumbents is warranted as a matter of fairness and is consistent with new entry.

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[20] UTC Comments at 7.

[21] If the Commission limits non-utility telemetry in the 1.4 GHz band to utility telemetry, non-utility incumbents would not be allowed to become primary operators.

[22] Under this standard, although Itron has a nationwide, secondary license in the band, it would only be eligible to convert to primary status in those areas in which it has installed a system.

2. Band flip areas

While the band flip aspect of the *Joint Proposal* received considerable support from the commenting parties, Itron and AHA are concerned that the band flip proposed in the *NPRM* differs from the one they developed. In the *NPRM*, the Commission has proposed that the flip areas would make WMTS the primary operator at 1429.5-1432 MHz and non-medical telemetry primary at 1427-1429.5 MHz.[23] By way of contrast, the *Joint Proposal* established "a geographical band flip, whereby seven areas in which the 2.5 MHz of WMTS-primary spectrum would be 'flipped' to the 'insides' of the 1427-1432 MHz band at 1429-1431.5 MHz, while utility telemetry would use the 'outsides' at 1427-1429 MHz (where incumbent UT systems operated) and 1431.5-1432 MHz (adjacent to potential high power land mobiles at 1432 MHz."[24]

The changes to the *Joint Proposal* reflected in the *NPRM* are not inconsequential because, as AHA explains, "WMTS licensees would need to devote at least .5 MHz of their reduced 2.5 MHz as a guard band to protect against potentially higher power land mobile operations at 1432 MHz."[25] In turn, "[t]his places the use of this spectrum in those areas at significant risk, and further complicates the manufacturing and design process for equipment that might be used in those areas."[26] Itron, therefore, joins AHA in urging the Commission to adopt the specific band flip plan offered in the *Joint Proposal*.

E. Frequency Coordination

Itron, AHA, UTC, Spacelabs, and Philips all agree that the 1427-1432 MHz band should be subject to frequency coordination.[27] Several parties also urge the Commission to require frequency coordinators to be responsible for maintaining records relating to the identity, location and technical parameters of all telemetry

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[23] *See NPRM* at ¶50.
[24] AHA Comments at 5-6.
[25] AHA Comments at 6.
[26] Id.
[27] *See* Itron Comments at 8; AHA at 7; UTC at 10; Spacelabs at 1.D., 2.B; Philips at 4.

licensees.[28] Itron supports this approach and believes such a database is essential to reducing potential interference to incumbent licensees.

Itron also supports UTC's offer to serve as a frequency coordinator in the 1427-1432 MHz band.[29] UTC has considerable experience as a frequency coordinator, and is well acquainted with utilities and their communications needs. Accordingly, UTC is well qualified to serve as a frequency coordinator in the 1427-1432 MHz band.

F. Channelization and Channel Limits

In its initial comments, Itron suggested that a limit of 1 MHz of spectrum per user per service area would be appropriate.[30] UTC proposes an alternative limit of 500 kHz.[31] Although UTC's proposal has merit, a 1 MHz limit will strike a better balance between the number of potential licensees and the spectrum that is available to each licensee.

Many utilities will require 1 MHz of spectrum to support new, wideband telemetry applications. Taking into account the comments of the parties in this proceeding, moreover, a 1 MHz limit is consistent with satisfying likely demand for spectrum in each service area.

Itron also proposed in its initial comments that, to maximize flexibility, the Commission not adopt channelization requirements for non-medical telemetry operations in the 1427-1432 MHz band, but merely require that assignments be made in minimum increments of 250 kHz. Other parties have proposed that the Commission require that channels be a particular size.[32] Itron continues to believe that the division of bandwidth should be left to the licensee. In the event that the Commission adopts a

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[28] *E.g.*, Spacelabs Comments at 2.B; AHA Comments at 7.
[29] *See* UTC Comments at 10.
[30] Itron Comments at 8-9.
[31] *See* UTC Comments at 11.
[32] UTC Comments at 11; Spacelabs Comments at 1.E.

channel standard, however, Itron urges it to permit licensees to subdivide and aggregate their channels so they can tailor their system specifications to their service needs.

G. Service Rules For Secondary Operations

No one has objected to permitting WMTS stations to operate on non-WMTS channels in the 1427-1432 MHz band on a secondary basis. The parties have differing opinions, however, concerning the rules that should apply to non-WMTS licensees operating on a secondary basis on channels on which WMTS is primary. The WMTS manufacturers express concern with the possibility of interference and suggest that secondary operations be prohibited or subject to power limits.[33]

Itron shares the manufacturers' interference concerns. For that reason, Itron and AHA developed stringent emissions limitations that are embodied in the *Joint Proposal*. Under the *Joint Proposal*, secondary stations would have to be a sufficient distance from co-channel WMTS stations to ensure that the secondary stations would have a field strength of less than 150 microvolts/meter, measured at the WMTS site over any 1 MHz with an averaging detector. These limits will amply protect WMTS stations.

GE suggests that WMTS could receive additional protection if secondary, non-WMTS users were limited to horizontal polarization.[34] This limitation, however, would be unnecessarily restrictive. It would prevent utilities from installing telemetry stations in areas where the angles of transmission preclude operating with a horizontally polarized signal. So long as appropriate power limitations are in place, there is no need to limit the polarization that secondary users may employ.

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[33] *See* Spacelabs Comments at 1.A; Philips Comments at 4.
[34] *See* GE Comments at 4.

H. Mobile Operations in the 1429.5-1432 MHz Band

Itron shares the concerns of Philips and AHA that mobile telemetry poses the potential for interference to WMTS.[35] The Commission should address these concerns by limiting non-medical telemetry operations to utility telemetry, as urged by the AHA, the WMTS manufacturers, and the utility parties, and by limiting mobile operations to fixed utility licensees. In addition, the fixed utility licensees should be subject to power limits for mobile operations that are more stringent than those applicable to fixed telemetry stations.[36] These limitations are consistent with the *Joint Proposal* and subsequent *ex partes* submitted by Itron and AHA supporting the use of mobile telemetry only in restricted circumstance.[37]

By licensing mobiles only to fixed licensees, WMTS will be able to identify quickly the cause of any interference that may occur. In addition, by refusing to grant "mobile only" authority, the universe of mobile users will be narrowed, again making the detection and cessation of interference more expedient.

I. Use of Cellular Architecture

In the *NPRM*, the Commission requested comment concerning whether it needed to prohibit cellular architecture in order to protect government incumbents and radio astronomy. None of the parties commenting on 1427-1432 MHz matters addressed this issue. Itron knows of no reason, however, that cellular architecture needs to be prohibited in this band to protect government operations or radio astronomy monitoring stations. To the contrary, Itron already employs cellular architecture in some of its systems and has been able to operate compatibly with these users.

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[35] Philips Comments at 3; AHA Comments at 5.
[36] *See* Itron Comments at 9-10.
[37] *See AHA December Ex Parte.*

CONCLUSION

For the reasons stated herein, Itron asks that the Commission adopt the rules proposed in the *NPRM*, with the modifications proposed in Itron's initial comments and this reply.

Respectfully submitted,

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